MARINE REVIEW.

VOL. III. CLEVELAND, OHIO, THURSDAY, MARCH 26, 1891. No. 13.

Eleven Bids for the Light-Ships.

Eleven lake builders bid for the work of constructing the light-ships for the Straits. The bids as received by the light-house board were as follows: Craig Ship Building Company, Toledo, $40 800; Wheeler & Co., West Bay City, $42,000; Rieboldt & Wolter, Sheboygan, $42,700; Cleveland Dry Dock Company, $43,092; Murphy & Miller, Cleveland, $44,622; Globe Iron Works Company, Cleveland, $45,000; James Davidson, West Bay City, $48,000; Union Dry Dock Company, Buffalo, $51,028; Burger & Burger, Manitowoc, $53,100; Detroit Dry Dock Company, $55,000; D. Bell Engine Works, $51,000 for steel hulls.

The Craig Ship Building Company, the successful bidders, will be required to have the boats finished by the middle of August as they must be at their stations in four and half months after the contract is signed.

The Outlook in Freights.

The total amount of ore sold for next season's delivery will not exceed half a million tons and no vessels have been engaged in connection with the sales, notwithstanding rumors to the contrary. The question of ore freight rates is no nearer a settlement than it was six months ago, although it is generally admitted that figures will be low. Some of the ore sold is at a reduction of $1.25 a ton on last year's prices, but even this is not a great decline, as most of the ore sold during the boom fall of 1889 was at prices fully 50 cents a ton above the two previous years when business was unusually brisk. The present sales do not, however, demand much attention, as purchases were made in small blocks by a few Wheeling and Pittsburgh furnace men who have been supplied and are now out of the market. The situation is not a settled one as large buyers are not ready to make purchases and probably will not be until after April 1 when the trouble in the coke region is expected to end. The movement from Lake Erie docks is a little more active, and at Ashtabula and Fairport the dock space is fully equal to that of a year ago, but on the N. Y. P. & O. dock, Cleveland, there is about 450,000 tons, and there is certainly more than 1,000,000 tons on all of the Lake Erie docks. A story widely printed around the lakes quotes J. C. Smith, of Alpena, as authority for the statement that charters for iron ore from Ashland to Buffalo have been made at 90 cents per gross ton, and from Escanaba to Cleveland, Sandusky and Buffalo at 65 cents per gross ton. J. C. Smith, of Alpena, whoever he may be, is not known in connection with either vessel or ore interests, and he is certainly misinformed regarding the state of affairs in Cleveland. A Milwaukee owner claims that he knows of 100,000 tons of ore being offered without takers at 75 cents from Escanaba to Ohio ports.

Several boats have been chartered during the week for coal from Cleveland and Toledo to the head of Lake Superior at 50 cents and from Cleveland to Milwaukee at 55 cents, some of them to load next month. Short trip charters are also being made at 30 cents to Detroit and 35 cents to Port Huron and Marine City. The early trade in bituminous coal is, of course, uncertain, on account of the demands of Ohio and Pennsylvania miners. On April 7 a very important meeting will be held in Pittsburg when the representatives of the coal mines and operators of Ohio and Pennsylvania will consider and determine on the scale of prices to be paid for mining coal during the year beginning with May 1. At this meeting not a few difficulties will face the trade. According to the intentions expressed at the national convention of the United Mine-Workers' Union held in Columbus, a month ago, the miners of both states want reforms made in the methods of pay as well as the rate of pay, which average about 7 per cent. advance in wages. The operators will likely propose a reduction of about 7 per cent. in wages for the Pittsburg district at least. If the miners continue in their determination to enforce the eight-hour rule this question will also cause some trouble.

Newspaper Service to Lake Interests.

There is probably no single line of business in this country more costly to newspapers than that of furnishing special reports of vessel movements, freights, accidents, etc., during the season of navigation on the lakes, and yet it is probably not fully appreciated by the vessel interests. In a few cases similar to the New York Herald's wonderful collection each day regarding ships in all parts of the world, the service is more costly, but vessel owners on the lakes seldom realize the expense to which newspapers are subjected in collecting every twenty-four hours 2,000 to 3,000 words by telegraph covering all ports on the lakes. The service is especially costly on account of being confined to less than a dozen leading papers on the lakes. In all other lines of news matter these papers have the benefit of press associations, through which telegraph tolls and other charges have been reduced to very low figures.

In the lake service during the past three years, however, the expense has been greatly reduced by a Detroit corporation known as the United News Association and managed, mainly, by Elliott G. Stevenson and Colin Fox. This association has, through a consolidation of the different interests, given the newspapers a telegraphic report at a marked reduction in both labor and cost. One corps of correspondents serves the asssociation and the reports are then sent out by a special telegraphic circuit from Detroit to the different lake cities. The system has greatly simplified the work and the newspaper managers have reason to feel thankful when the heavy charges and annoyances of past years are considered. Some of the newspapers employ competent men who have seen years of service in this work but it is unfortunate that in many cases the men are hardly given time to become acquainted with the geography of the lakes before they are transferred to other departments. John Chapin, and later Homer J. Carr, of the Chicago Tribune, were men very thoroughly acquainted with the lake marine and the Tribune was looked up to by vessel owners during their time. Louis Bleyer, of the Milwaukee Evening Wisconsin, and J. L. Schrader, of the Buffalo Courier, are veterans in this line and their columns show a knowledge of the business.

Divided Among Three.

A dispatch from Detroit says that the decision in the Ohio-Siberia collision case calls for a triple division of damages, the propeller Samuel L. Mather being a party to the libel, which was for $30,000. This case resulted from the sinking of the Ohio in the Sault river last season. The Ohio, bound up, met the Siberia and Mather, bound down, in close quarters in the Sault river. The Mather passed the Siberia, and the latter, taking a sheer, went into the Ohio.

Clip This for Reference.

On a neat business card Mitchell & Co. present the following comparative statement for reference in freight matters. It is a ready reckoner for managers of boats in the ore and grain trade:

Corn per bushel.	Equals	Ore per ton.	Wheat per bushel.	Equals	Ore per ton.
1½ cents	"	.60	1½ cents	"	.5600
1¾ "	"	.70	1¼ "	"	.6532
2 "	"	.80	2 "	"	.7466
2¼ "	"	.90	2¼ "	"	.8399
2½ "	"	1.00	2½ "	"	.9332
2¾ "	"	1.10	2¾ "	"	1.0265
3 "	"	1.20	3 "	"	1.1200
3¼ "	"	1.30	3¼ "	"	1.2100
3½ "	"	1.40	3½ "	"	1.3065
3¾ "	"	1.50	3¾ "	"	1.4000
4 "	"	1.60	4 "	"	1.4933
4¼ "	"	1.70	4¼ "	"	1.5865
4½ "	"	1.80	4½ "	"	1.6798
4¾ "	"	1.90	4¾ "	"	1.7731
5 "	"	2.00	5 "	"	1.8665

Canadian Duties on Foreign Built Vessels.

The deputy collector of Cleveland was asked what was the cost of transferring American vessel property to Canadian owners. In reply he gave the following extract from Canadian law: "Ships and other vessels built in any foreign country, whether steam or sailing vessels, on application for Canadian register, on the fair market value of the hull, rigging, machinery and appurtenances; on the hull, rigging and all appurtenances except machinery, 10 per cent. ad valorem, on boilers, steam engines and other machinery, 25 per cent. ad valorem."

Around the Lakes.

Capt. Michael Fitzgerald will command the new Milwaukee steamer Pueblo.

The exact figures of the steamer Shrigley's loss by fire at Buffalo are $7,946.30. She is insured for $28,000.

Lyons & Harder, of Ashland, will erect at an expense of about $2,000 a set of dry boxes for raising and repairing small craft.

The Colorado and Osceola are fitting out at Port Huron. They will again run between Port Huron and Duluth during the coming season.

Capt. James Dority died at Toledo, Saturday, aged 64 years. He hailed from New York State, and had been identified with the lake traffic.

Boilers have been placed in the steel steamer building at the Detroit Dry Dock Co.'s yard at Wyandotte and she will be launched within four weeks.

Capt. A. P. Foster, who for three years has been keeper of the Pipe island light-house, near Detour, has been appointed first officer on the light-house tender Warrington.

Capt. Samuel Shannon and Capt. E. V. Marion are candidates for the position of hull inspector for the Buffalo district. The position is now held by Capt. McCrea.

G. P. Van Rensselaer, of Milwakee, chief engineer of the Inter-Ocean Transportation Company's steamer Massachussetts, died Friday of heart disease, very suddenly.

The steel ranges and galley outfit for the Minnesota Steamship Company's steamers Mesaba and Marina, building at the Chicago Shipbuilding Company's yard, will be furnished by McBean, Edge & Co., Buffalo.

The engineers of the steel steamers Lackawanna, Scranton and America, have begun work at Buffalo. These steamers will be commanded, as last season, by Captains Hulligan, Green and Gibson, respectively.

Capt. John M. Johnson, manager of the Charleton Tug Line, is at Port Huron and is ready to begin the work of blowing up the sunken schooners Tremble and Ben Hur as soon as the flow of ice in the river is at an end.

The side-wheel passenger steamer Pearl, owned and operated for a number of years past by the Clark estate, of Detroit, has been sold to the Crystal Beach Company, a new Buffalo corporation that will engage in excursion business. The purchase price is a trifle under last year's rating of $25,000. The boat's cabin arrangements will be generally remodeled.

Capt. Boynton, of the Mackinac straits ferry St. Ignace is quoted as saying that he did not expect to see the straits open before April 20 or May 1. He says so far as can be seen the water is covered with ice two feet in thickness.

The fleet that left Chicago last spring for Buffalo took out 4,500,000 bushels of grain, and most of the boats had been chartered during the winter. Now there are only a dozen boats under charter and their combined capacity falls short of a million bushels.

William Sullivan has been appointed chief engineer of the steamer C. W. Elphicke. Of the boats managed by C. H. Lane, Buffalo, the Hiawatha will be commanded by Capt. C. H. Noble, with George Charlton as chief engineer, and Henry Harris will sail the Minnehaha.

No life-saving station will be built at Kewaunee until after the world's fair exhibition in 1893. It is proposed to construct a station at Chicago for the big show and after that is ended take it to Kewaunee. This is in accordance with a plan formulated by the government officials.

The directors of the Illinois Steel Company voted at the annual meeting in favor of erecting a plant for rolling plates and angles for shipbuilding. This will give cheaper material to the Chicago Ship Building Company, as that concern has been getting its steel from the mills of Pennsylvania and Ohio.

In the iron ship yards, of F. W. Wheeler & Co,, of West Bay City, Mich., the Archer fuel gas process has been in use in the bending and heating furnaces for over one year. The secretary of that firm writes: "It has been a great success; think it the best process in use for bending ship frames and plates."

H. J. Pauly, of Milwaukee, has purchased a half interest in the barges A. T. Bliss and T. H. Cahoon, and will place them behind the steamer Westover during the coming season, in the lumber trade. The Bliss measures 415 and the Cahoon 410 tons. Both were built at East Saginaw in 1881, have A2½ ratings, and had valuations of $15,000 each last season in Inland Lloyds.

T. J, Elderkin, of Chicago, is engaged in an effort to increase the power of the Lake Seamen's Benevolent Association, by including in its membership all men employed aboard and about sail and steam craft, excepting officers. The aim is to have the association, which has severed its connection with the Knights of Labor, take in all seamen, bargemen, firemen, wheelsmen, lookouts, longshoremen, grain shovelers, lumber and coal and iron ore handlers, shipcarpenters and calkers. Elderkin is visiting all lake ports. A meeting was held in Buffalo a few days since.

Recent transfers of vessel property at Milwaukee are: Schooner Black Hawk, Halvor Williams, of Racine, to John A. Nelson, of Milwaukee, one-half interest, $2,250; schooner La Petite, D. W. Chipman's interest to Capt. Larson, both of Milwaukee; propellor J. G. Nichols, Robert Nichol, of Milwaukee, to John Duncan, of Green Bay, $1,000. The Nichols measures 74.16 net tons and was built in 1889. The lumber carrying propellers C. H. Starke, City of New York and John E. Hall, all of which have been sold recently to lower lake parties, will leave the Lake Michigan trade in the spring.

Port Huron shipmates of Capt. Oscar Hill, who died at St. Clair a few days ago, bear kind recollections of him. Captains Robert Woodwin, H. N. Jex, D. Sullivan, A. Slyfield, T. Bennett, Wm. Murray and Horace Wells, all of Port Huron, attended the funeral at St. Clair. One of them writing of the deceased says: "For many days he had kept his craft full and by, as the fierce storm whistled through his rigging like a funeral dirge. 'Old Horax I am here,' he bravely shouted. Capt. Hill had his faults, but who is perfect. A better sailor never danced over the billows of Lake Huron, and his heart was always with his hand when he fell in with a shipmate in the breakers of poverty. He took no stock in sky pilots, had no use for the fables of 1800 years ago, always declared that nature's laws were inevitable and all who danced must pay the fiddler. When the topsail had to be reefed, 'lay aloft you shell back' was the order to be obeyed. 'Haul out your reef earrings, knot the points,'—with both hands for the owners, while you clung to the yard arm with teeth and feet for your own safety. Tears, prayers, and entreaties were all right in their place but of no use in such a case, were the ideas of Capt. Oscar Hill."

The steam yacht Norma, of New York, will replace her present windlass with a Providence pump brake windlass from the American Ship Windlass Company, of Providence, R. I.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland Iron Mining Company	$ 25 00	$ 15 00	$ 17 00
Champion Iron Company	25 00	90 00	100 00
Chandler Iron Company	25 00	39 00	40 00
Chicago and Minnesota Ore Company	100 00	.....	110 00
Iron Cliffs Iron Company	50 00	.....	120 00
Jackson Iron Company	25 00	90 00	100 00
Lake Superior Iron Company	25 00	65 00	68 00
Minnesota Iron Company	100 00	70 00	80 00
Pittsburg Lake Angeline Iron Co	25 00	145 00	.....
Republic Iron Company	25 00	27 00	29 00
Michigamme	25 00	8 50	10 00

Iron mining stocks have not recovered from the depression that followed the beginning of a stringency in the money market and the consequent decline in all branches of the iron industry four months ago. Leading Lake Superior stocks have not presented a single change of importance in prices during the past month but trading is, if any, slightly more active. A little interest was started in Republic during the week by rumors of a dividend of 7 per cent., but there has been no official announcement that a dividend is even contemplated. Holders show little disposition to part with stock at the low prices and are somewhat more confident, as it is generally agreed that the tendency must be upward from this time on.

The Dunn mine, which Ferdinand Schlesinger retains from the financial wreck, has been worked to advantage during the winter and as much ore as can possibly be mined has been opened. The mine can probably produce 250,000 tons of ore during next season if a market can be found for it. The stock pile now contains 38,000 tons, an amount equal to that in stock at this time a year ago. The daily hoist now is about 100 tons. With 100 men at work the Mastodon mine is producing about 5000 tons a month, and has a stock pile of 16,000 tons. This mine can produce as much ore as last year and even increase the output if desired. Another mine of this district that can show a big output is the Shafer. With a third shaft completed this mine can produce 125,000 tons.

The miners and mine managers of Michigan are making a determined fight against the Doran bill, the state legislative measure which proposes to place a tax of 20 cents a ton on all iron ore produced in the state, and it is probable that they will be successful. The mining interests demand, in answer to the proposed law, that their property be taxed on an equality with other property. Under the present specific tax most of the big mining companies pay in taxes an amount much greater than would be required of them if they were assessed the same as all other property.

The Sheridan mine in the Iron River district, owned by John Christie, M. E. Main and others, of Escanaba, gives promise of a liberal output of ore this season that will show 65 per cent. in metallic iron and is about even with the Bessemer limit. A block of several thousand tons is said to have been already sold to the new furnace at Mamstique.

The different mines involved in the Schlesinger troubles are behind in the payment of wages to the men. The men at the Negaunee group, who had not been paid for either January or February, quit work last week. After remaining idle a few days their January wages were paid and they returned to work. At the Chapin the January pay roll was also due but the men seem satisfied that they will be paid.

The Chapin company is adding a hoisting and pumping plant to its equipment that will eclipse anything in the mining business the world over. Some idea can be formed of the enormous stretch of ground to be drained at the Chapin when it is known that last year the water raised amounted to about 3,000,000 tons, or more than four times the amount of ore produced.

The long list of different styles of widlassess which have been taken out and replaced with the Providence windlasses from the American Ship Windlas Company, attest to the superiority of these windlasses over any other style in use.

Costly Dock Work.

The new Lake Shore ore docks at Ashtabula Harbor are only partly completed, but some idea of their cost can be formed from the material already used and the expense attending the dredging work. It is estimated that the removal of rock in dredging a slip to the swamp ground, on which the docks will be located, will alone cost $75,000. Ninety cribs are now in place, involving the use of 1,638,000 feet of pine, 2,678,000 feet of hemlock, and 397,000 feet of elm, or a total of 4,713,000 feet of timber of all kinds. In addition to this, 250,000 pounds of bolts and 20,000 yards of Kelley island stone have been used. Over $100,000 has been paid for dredging and labor, the expenditures now exceeding $1,000 a day.

Sub-Marine Work.

Joseph G. Falcon who engages in sub-marine work of all kinds on the lakes is about to begin wrecking the steamer Kasota, sunk last season in the Detroit river, near Detroit, in collision with the passenger steamer City of Detroit. He has just completed plans and specifications on the Washburn & Moen water pipe plant which is to be laid at Waukegan, Ill., just south of the United States sugar refinery. It consists of a 36-inch cast iron pipe running 2,800 feet out into Lake Michigan, with a submerged crib which will revolve by means of air and keep away ice and other matter. The depth of water being twenty feet, the pipe will be laid through sand and gravel on a bed of rock. A well eighteen feet in diameter will be sunk on shore to a depth of twenty-six feet. At a distance of one mile and a quarter out in the lake there is only twenty-three feet of water. At present Mr. Falcon is finishing the work of laying a 30-inch cast iron pipe with rotary strainer in the lake at Evanston.

Cleveland Matters.

Capt. Dahlke has purchased the Chicago pleasure boat Charm.

Wrecker Reid will, as soon as the weather permits, begin operations on the schooner Golden Fleece, which went ashore last fall near Dunkirk, Lake Erie. He has been negotiating with Cleveland parties for assistance in the work.

H. D. Root, of Lorain, was in Cleveland on business during the week. Few lake shipbuilders have seen as many years of service as Mr. Root. He has been building boats on the lakes for about fifty years and is still in charge of a ship yard. The Luty, Botsford, Joseph P. Farnan, Margaret Olwell, Our Son, and all of Capt. Greenhalgh's tugs are among the boats built at Lorain.

There is a general tendency among vessel owners to organize stock companies for the management of their property. The Mitchell Transportation Company is the name of a corporation just organized among owners of the steamer W. F. Sauber, building at Wheeler's West Bay City yard for Capt. John Mitchell and others. The steamer Geo. T. Hope, controlled by John C. Fitzpatrick, of Mitchell & Co., is now owned by the Mentor Transportation Company. Both of these companies have nominal headquarters at Mentor, O. The Young Transportation Company is a new Saginaw Valley corporation in which W. A. Young, J. B. Moritz, Louis Moritz, Charles E. Young and William A. Young are stockholders.

Payne's Business Pointers, a 200-page book, contains a mine of information that is used in business every day, and will soon save its worth in time used in looking over two or three books for the facts contained. It also contains the new tariff complete. Excelsior Publishing House, 29 Beckman St., New York. How to Draw and Paint, published by the same company is a valuable book for young artists, containing a chapter on marine painting.

The tug Caroline Williams, of Manistee, has been sold to the government by Capt. Charles Gnewich. She will be utilized in towing dredges and dump scows.

Duluth Grain Prospects.

Special Correspondence to the MARINE REVIEW.

DULUTH, MINN., March 26.—The vessel agents are beginning on their season's business, though the opening of navigation is generally thought to be a month and a half away. Several wheat charters are reported to Buffalo, some on private terms. The going rate is now 2¾ cents. Charters have been made through to New York at 7¼ cents, with the present rate at 7 cents. A new feature in the freight market here is the contract for through rail shipments of wheat to New York. Some 300 cars have already been taken. The rate is given out as 17 cents. Wheat stocks in store here Monday amounted to 4,244,491 bushels, an increase of 94,878 bushels for the week and 832,000 bushels less than there were here a year ago. The increase from now to the close of navigation will hardly be more than 100,000 bushels a week, if that much, so there will be less wheat to move out when the season begins than there was in 1890. Late estimates of the wheat in country elevators and farmers' hands place it at 11,000,000 bushels. This is to be divided between Duluth, Minneapolis and other places, and if the estimate be perfectly correct, there will not be much to come here for eastern shipment. It is thought by some that the McDougall barges will take loads of wheat to Montreal when navigation opens. Several of the new ones and the Colgate Hoyt are to be taken to salt water early in the season.

It is likely that the lumber shipments from Duluth to the east by lake will be much larger this year than ever before. In past seasons shipments have only been from 5,000,000 to 10,000,000 feet. This year there will be several new mills in operation and most of their product will go east. It is probable that the total shipments will be from 25,000,000 to 30,000,000 feet. Ashland will also ship a large quantity of lumber by water.

Labor Movement Started at Buffalo.

Special Correspondence to the MARINE REVIEW.

BUFFAO, N. Y., March 26.—At its recent convention in Detroit, the Lake Seaman's Benevolent Association, for good and sufficient reason, decided to withdraw from the Knights of Labor. It had been connected therewith for two years, had paid out about $17,000 on account of such connections, and had received nothing in return. The seamen then decided to affiliate with the Pacific and Atlantic ocean sailors' organization, but such affiliation has not been perfected. Now they have a big work of their own on hand. This is the formation of a sort of knight of labor organization taking in all the men who build and man ships and handle cargoes. The idea is that, as all these men depend on lake traffic for a livelihood, they should stand together. It isn't a wild idea, anyway.

T. J. Elderkin, general president of the seamen's association, delivered an address on organization, Tuesday evening, before a large gathering made up of seamen, bargemen, firemen, wheelsmen, lookouts 'longshoremen, grain shovelers, coal handlers, lumber shovers, iron ore handlers and shipbuilders. He is a forcible if not grammatical talker, has been a sailor himself, and is well posted on the affairs that have bearing on the lake workers' calling. His method is earnest, and his argument plausible. In short, he is just the sort of a man to influence the laboring masses. As a stump speaker he would be a success. Indeed, it is understood that he has quite a liking for politics, and that he is giving an active hand, or rather an active tongue, in the Chicago municipal election canvass. Mr. Elderkin set forth in vigorous style the disadvantages suffered by the lake wage workers for want of proper organization. Combination was the cure-all for all their troubles. He was willing to allow capital as many rights as labor, but no more. The Cleveland vessel owners and Shipping Master Rumsey were alluded to in touching terms. He advised all lake workers to unite, and all to become citizens, so they could use the ballot to secure their rights. He argued for the formation of a central organization, to include all the classes of workers mentioned above. He favored the establishment of a separate union for each class in all ports where possible. Where there were so few of any class as to make such union inadvisable, the men could unite with some other class at that port. Thus, the Seamen's Union for two years has been taking in wheelsmen and lookouts, and firemen when the latter had no separate union. A marine trades council is to be formed at each port, composed of three delegates from each of the local unions. Each union will manage its own general affairs; but matters of great importance, as wages, strikes, etc., must be acted on by all the unions under the control of the organization. Another speaker, who was flushed with something else than eloquence, covered the ground in this style: "After all the talk on the relations of capital and labor, the whole thing amounts to just this—more money for the gang."

The plans of the association were endorsed by a series of resolutions. Elderkin returned to Chicago, Wednesday. The annual election of the seamen's association takes place Thursday. Thereafter, until April 7, he will be engaged in trying to down Mayor Cregier, who, he says, has not been much of a friend to the seamen. Last Monday he went to Tonawanda with several local workers to stir up the badly-demoralized lumber shovers. He will return to Buffalo when he has got politics off his hands.

Capt. Dobbins says the proposed site for a life station at Ashtabula is 'out of sight.' So much mud is there that the spot can't be found. As soon as convenient, he will make a trip to that port. The government has not accepted the offer of the ground at the price named, but probably will do so. The good captain fears that the building of a station at Niagara will have to be postponed further, because the government intends to use the appropriated fund for getting up an exhibit at Chicago for the fair. Strange that so noble and useful a calling as life saving should be so recklessly hampered.

It is believed that 75 per cent. of the local vessel owners and managers wi l sign the agreement to hold back until May 15. Certainly, it would be well for them to live up to it, too. But will they?

Capt. Angus McDougall, vessel agent, is to go to Duluth, to look after the running interests of the whalebacks. He is not related by blood to Capt. Alex. McDougall, the whaleback propagator, but they are near countrymen and fast friends.

West Bay City Ship Yard Work.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., March 26.—It was reported that F. W. Wheeler would return from his recent trip to New York with a contract for another ocean freighter, but Mr. Wheeler is back and no contract has materialized as yet. F. D. Wheeler, brother of F. W. Wheeler, who has been acting as assistant superintendent of the Wheeler shipyard, has resigned his position and gone to Pearlington, Miss., where he will take a position as superintendant in a small yard started for the purpose of building some lumber freighters for use on the Mississippi river. When that work is completed Mr. Wheeler will undoubtedly become manager of the lumber concern building the boats.

Repairs on most vessels lying at this port are practically completed, except in the case of those that are undergoing a very thorough overhauling.

The hold-back movemement will not include the lumber carriers. This is rather disheartening to local vessel men. The majority of them think it would be far better for all if owners of lumber carriers as well as the big boats would not start the season until May 1 at least, and many would be willing to wait until May 15. Work at both the shipyards is progressing rapidly. Wheeler & Co., have over 600 men employed in their yard, and Capt. Davidson has at least 750 men in his yard.

The Underwriters' Meeting.

Special Correspondence to the MARINE REVIEW.

CHICAGO, ILL., March 26.—The Lake Underwriters Association convened in room 44 at the Grand Pacific Hotel, Tuesday afternoon, and closed their labors at 10 a.m. Wednesday. Their prolonged conference was productive of but little change in the hull tariff which prevailed through the season of 1890. C. H. McDonald, of Detroit, presided. The first question that came up for consideration was the collision of vessels and their liability for damages under the provisions of admiralty law. The hull tariff was discussed with a special reference to Inland Lloyds 1890 Register. A long discussion was also indulged in on the increase of the usual April rebate to 20 per cent, and making Dec. 5 the date of expiration for policies. Among the prominent lake underwriters and vessel owners present were: P. H. Fleming, J. B. Kelley, J. S. Gadsden, C. G. L. McCurdy, Chicago; Townsend Davis, Paul Bullard, H. S. Sill and O. T. Flint, Buffalo; A. H. McDonald, E. Harbeck and C. A. McDonald, Detroit; D. Vance, Milwaukee; B. L. Pennington, James Corrigan and J. C. Gilchrist, Cleveland; A. A. Parker, J. C. Burton and N. L. Whipple, Detroit. After adjournment the underwriters and vessel men did ample justice to an elegant luncheon.

P. H. Fleming & Co., general insurance and vessel agents, have received the general agency for the Cincinnatti underwriters to engage lake vessels for hulls and cargoes. This agency is quite an imporiant one to Chicago marine insurance, and is the first Ohio agency outside of mercantile insurance bestowed upon a Chicago company. Mr. Fleming, who is one of the best posted men on lake merchant marine and freight rates, when asked as to the strength of the movement to retard the opening of navigation, replied: "Well, it does not occur to me that the vessel owners can win, and there are some very good reasons for my expressing myself as I do. There are at this moment thirty vessels at Chicago docks loaded with grain, and ten more say, at Milwaukee. The prospects of that grain heating before May 1 or May 15 are excellent; the owners and captains know it; they will not run the risk, and one by one they will pull out of port, agreement or no agreement. It is idle to talk of holding vessels late in the season, not alone from this standpoint, but because grain rates to Erie have already been made at a two cent rate and many owners are consequently anxious for a long season." Over 350 members were present at the Lake Seamen's Benevolent Association meeting, Tuesday night, and a committee was appointed to accomplish an alliance with other unions concerned. Their demand will be for $2 per day.

Opening of Straits and Canals.

At this time a year ago, as well as two years ago, big grain fleets in Chicago were fitted out and ready to force a passage through the Straits of Mackinaw with the first notice of a movement of the ice. Last year the opening was on April 8 and in 1889 on April 6. There will be no such disposition to move early this season, however, unless the late opening movement receives a decided set-back, and in any event there is no indication of the ice giving way until later than usual in April. The dates of opening of different connecting waterways for a period of years past are given below:

STRAITS OF MACKINAW.

1890	April 8	1873	May 1
1889	April 6	1872	April 28
1888	May 4	1871	April 2
1887	April 24	1870	April 18
1886	April 21	1869	April 28
1885	May 5	1868	April 19
1884	April 25	1867	April 23
1883	April 28	1866	April 28
1882	April 3	1865	April 21
1881	May 3	1864	April 28
1880	April 4	1863	April 17
1879	April 22	1862	April 18
1878	Mrch 15	1861	April 25
1877	April 18	1860	April 13
1876	April 28	1859	April 3
1875	April 28	1858	April 5
1874	April 29		

ST. MARY'S FALLS CANAL.

	Opened.	Closed.		Opened.	Closed.
1890	April 20	Dec. 3	1872	May 11	Nov. 26
1889	April 15	Dec. 4	1871	May 8	Nov. 29
1888	May 7	Dec. 4	1870	April 29	Dec. 1
1887	May 1	Dec. 20	1869	May 4	Nov. 29
1886	April 25	Dec. 4	1868	May 2	Dec. 3
1885	May 6	Dec. 2	1867	May 4	Dec. 3
1884	April 23	Dec. 10	1866	May 5	Dec. 3
1883	May 2	Dec. 11	1865	May 1	Dec. 3
1882	April 21	Dec. 3	1864	May 2	Dec. 4
1881	May 7	Dec. 5	1863	April 28	Nov. 24
1880	April 28	Nov. 15	1862	April 27	Nov. 27
1879	May 2	Dec. 3	1861	May 3	Nov. 14
1878	May 8	Dec. 3	1860	May 11	Nov. 26
1877	May 2	Nov. 30	1859	May 13	Nov. 28
1876	May 3	Nov. 26	1858	April 18	Nov. 20
1875	May 12	Dec. 2	1857	May 9	Nov. 30
1874	May 12	Dec. 3	1856	May 4	Nov. 28
1873	May 5	Nov. 12	1855	June 18	Nov. 23

WELLAND CANAL.

	Opened.	Closed.		Opened.	Closed.
1890	April 15	Dec. 10	1877	April 17	Dec. 5
1889	April 16	Dec. 1	1876	April 17	Dec. 15
1888	April 23	Dec. 8	1875	May 3	Dec. 14
1887	May 3	Dec. 10	1874	April 9	Dec. 10
1886	April 19	Dec. 1	1873	April 11	Nov. 29
1885	May 7	Dec. 9	1872	April 22	Dec. 10
1884	April 23	Nov. 30	1871	April 6	Dec. 1
1883	April 5	Dec. 12	1870	April 19	Dec. 18
1882	April 30	Dec. 5	1869	April 20	Dec. 11
1881	May 2	Nov. 19	1868	April 15	Dec. 6
1880	April 20	Nov. 30	1867	April 17	Dec. 19
1879	May 5	Dec. 5	1866	April 17	Dec. 16
1878	May 7	Dec. 14			

Will the Rivers be Dark?

Nothing has been said regarding the maintenance of private lights during the coming season. Neither Capt. McKay nor Mr. Keep is desirous of undertaking the work of collecting money for them. The reporters and others who look after the lights may continue the work but it is not known whether they will or not. The appropriations of the last congress provide for lights that will displace some of those maintained by the vessel owners last year, but these aids will be some time in coming. It is probable that the Lake Michigan light-ships will be in position before any of the stationary lights or fog signals are secured.

The Hold-Back Movement.

Although the movement to hold all ore and grain carrying vessels in port until May 15 received a decided set-back at the outset by the action of two or three Buffalo owners the indications of its being carried out are now better than ever. The unanimous action of the vessel owners of Detroit and a rally among Buffalo owners who favor the movement are considered of sufficient importance to call another meeting in Cleveland on Friday or Saturday of this week. The agreement has been signed by all but three of the Cleveland owners. These three are ore companies owning a large amount of tonnage but two of them have agreed to consider the matter of holding off, now that the scheme shows force. They were of the opinion that it could not be carried out. Most Cleveland owners expect some hope of the opening being delayed and great importance is attached to the coming meeting, as the showing from the different ports is very encouraging. No engineers have as yet been put to work on Cleveland boats that engage in upper lake trade, and in most cases it will take from two to three weeks to get boats ready for the opening. Milwaukee owners met to consider this matter, Wednesday afternoon.

In General.

Capt. Loftus Gray has turned the schooner Columbian over to Capt. Carlton Graves and negotiations for a sale of the boat to C. E. Chilson, of Lorain, are about completed.

Vessel owners and shippers at Lake Michigan and Green bay points are engaged in an effort to load their own boats if longshoremen refuse to work for 25 cents an hour during the coming season.

If the citizens of Lorain succeed in inducing the Bucyrus Steam Shovel and Dredge Company to remove to that place it is probable that the erection of a plant for building tugs and lighters will follow.

The tug Henry Troy, of Milwaukee, is the only new lake boat recorded this week in the regular list sent out from the office of the commissioner of navigation. Her official number is 96,098, gross tonnage 27.28 and net tonnage 15.95.

The committee appointed by the Cleveland Vessel Owners' Association to consider the matter of allowing extra pay to engineers on metal boats has granted permission to the owners of such boats to pay $115 a month to chief enginers and $75 a month to second engineers.

Lake and Rail Rates.

At the New York meeting of the different traffic associations an agreement was reached as to the lake and rail tariff for the coming season. It was arranged that northwestern rates should be based on a charge for first class freight from New York to St. Paul by all-rail routes of $1.30 per 100 pounds, and by lake and rail routes $1.11 via Chicago and $1.01 via Duluth. These new lake and rail rates are an increase of 30 cents per 100, first class, over last year's tariff. No action was taken on east-bound rates from Chicago and Duluth. This rate would be very nice for the all-rail lines, which would *mafia* the lake and rail lines out of the business with only this light differential in the way. But there is little prospect of these rates being ratified by the Lake Managers' Association, which meets in Buffalo, Thursday. Neither has J. J. Hill given his consent to any such a deal. In view of the present outlook the lake and rail lines will be doing well if they maintain last season's rates. Below are the names of the lake lines in the Lake Managers' Association: The Union Steamboat Company, Lake Superior Transit Company, Western Transit Company, Northern Steamship Company, Erie and Western Transportation Company, Lehigh Valley Transportation Company, Port Huron line of steamers, and Ogdensburg Transportation Company. John Gordon of the Northern Steamship Company is chairman.

The steamer Susan E. Peck has ordered a steam attachment to her hand windlass of the American Ship Windlass Company, of Providence, R. I., for handling her anchors and chains and also a steam capstan aft for handling the stern lines.

The steamer City of Boston, of the Norwich and New York Transportation Company, has replaced her Perley windlass with a Providence steam capstan windlass from the American Ship Windlass Company, Providence, R. I.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—$2.00 per year in advance. Advertising rates on application.

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,425. Number of boats through Suez canal during 1889, full year, 3,425; tonnage, net registered, 6,783,187.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

Entered at Cleveland Post Office as Second-class Mail Matter.

THE secretary of the the treasury has issued a circular calling attention to the law requiring line carrying projectiles and the means of propelling them on steam vessels and suspending for one year from March 29, 1891, the operation of the law on the lakes and bays of the United States. The repeal of the law as regards the lakes is still sought by lake vessel owners and it is probable that this will be granted, as the act suspending its operation for another year calls for experiments with the guns and projectiles and a report as to whether necessity exists for such life saving appliances. Gen. Dumont, of the inspection service, to whom this investigation will in all probability be intrusted, has already expressed the opinion that there is no need of such appliances on the lakes.

CHICAGO made such a fuss over the launch of the steel steamship Marina, of the Minnesota Steamship Company's fleet, that eastern people were led to believe that a metal boat is something new on the lakes. The Maritime Register, of New York, one of the greatest maritime publications in the world, actually announced the launch as that of the "first large steel steamer ever built on the lakes," when the fact is there were four other boats of the same fleet, all duplicates, in commission last season, and the metal boats of this class on the lakes may be counted by dozens. They were built in Cleveland, Buffalo and Detroit, however, and were not ushered into service with the boom that characterizes Chicago in all its affairs.

REFERENCE has been made in these columns to a measure submitted to the last congress by Mr. Farquhar, providing for freeboard or load marks for vessels. The commissioner of navigation calls attention to the fact that the measure does not apply to lake vessels but to salt water craft. The situation to which Commissioner Bates called attention in his last report, is this: We must either mark our vessels ourselves, or they will be prevented from loading full depth to sail from British ports. As we know the British inspectors will refuse our vessels fair play, if they can, it behooves us to have rules of our own and apply them ourselves.

THE signal service is an important factor in the lake marine and vessel owners in such ports as Cleveland, Buffalo, Chicago Milwaukee and Duluth should see to it that they secure officers authorized to give out local weather forecasts under the change about to take place in that service. In accordance with a law passed by the last congress, the signal service becomes a part of the agricultural department of the government, and in only twenty cities of the country will local officers be permitted to make local forecasts. The principal lake cities should apply for the benefits to be derived from these special offices.

TRADE publications of Philadelphia are making a great noise over an estimate that the year's shipments of bituminous coal will amount to 2,500,000 tons, exceeding the shipments of any other period in the history of the country. Two and a half million tons is a very large quantity of coal to be handled in any one shipping district, but Cleveland can beat this record. There was sent to the northwest by lake from Cleveland and neighboring ports on Lake Erie last season (eight months of navigation) 3,107,816 tons of bituminous coal, and Buffalo shipped in addition 2,157,810 tons of anthracite.

Two Important Legislative Measures.

Two very important matters undecided by the last congress and which will again demand the attention of lake vessel owners, are the regulation of raft towing and a settlement of the agitation for life line carrying projectiles. The impression has gone out in some quarters that the Burton raft bill became a law. This is not true, as the bill, although reported favorably from the committee on commerce, was returned from the committee too late for action in the rush that characterized the closing days of the session. Representative Burton did excellent work in connection with this measure, however, and it will be a less difficult matter for lake representatives in the next congress to take it up where he left off.

The second measure, the line carrying projectile law, has simply been disposed of for the present by an act giving authority to the secretary of the treasury to suspend the law on the lakes for another year, which he has done. The secretary is also directed, however, to investigate and report to congress in December, 1891, on the usefulness and practicability of the apparatus in question, and it is in this direction that lake vessel owners must look to their interests. The investigation will in all probability be committed to the supervising inspector general of steam vessels. As this officer has already expressed himself strongly in opposition to these guns and projectiles on lake vessels, it may be confidently expected that his report will recommend the absolute repeal of the law so far as lake craft are concerned. In his report to the annual meeting of the Lake Carriers' Association on this matter Secretary Keep says: "While the regulations of the board of supervising inspectors now except from the operations of the existing law freight and towing vessels, and leave its requirements applicable only to vessels having a passenger license, it is to be noted that the act of congress makes the law applicable to all classes of steamers, and that the authority of the board of supervising inspectors to make the exceptions is more than doubtful. In all probability this point would have been raised by the manufacturers of the apparatus, if the law had actually gone into effect, and, in this event, it seems highly probable that all steamers on the lakes would have been compelled to provide themselves with this useless and expensive appliance. By a conservative estimate, the aggregate saving to owners of steam vessels on the lakes by a repeal of this law will exceed $200,000."

American Lake Steamers

AND FOREIGN GOING VESSELS, WITH RUDIMENTARY NOTES ON STABILITY AND CASUALTIES IN FOREIGN WATERS.

* *By Joseph R. Oldham, N. A., Cleveland, O.*

In after years—and it may be within a very short period—the statistical student or the business man, will point to the year A. D., 1891, as the commencement of the pre-eminent reign of the god Vulcan, such as the earth had never before realized, and in doing so his thoughts must inevitably revert to the northern states of the great republic. If his endeavor tends towards location as well as to the volume of production, the finger must follow the eye to our northwestern lake district and, if that be so, shall we be too prophetic if we assume that this very point of earth will be, as it now is, perhaps the most interesting seaport in the known world when the subject under consideration is that of iron and steel production, and the carriage of same, which is the raw material out of which the navi s of the immediate future will be constructed. For the first time in the remarkable, or rather wonderful, history of the United States of America, she has completely eclipsed any other nation in the amount of pig iron and bessemer steel production, ten and one-third million tons of the former and nearly four million tons of the latter bei g our output for the year 1890. These products should have great interest for us in this large shipbuilding center, for though they may not be the raw material to the shipbuilder, they are to the iron master and there is but one step from the rolling mill to the shipyard. It was well said that the early times, dating far back through the centuries, formed the age of bronze, and that the last two or three hundred years, leading up to our own time, may be called the age of iron. We have now, however, advanced into the age of steel and ere many years have passed away iron will practically have become historic. Probably before another decade is over, the age of bronze, possibly of a different kind, will again be lived over, history thus repeating itself.

Permit me to draw your attention to the means by which much of our most valuable metals are transported. Of course, your thoughts will in the first place revert to our lake vessels, and many of you will narrow your cogitations down to steam vessels some even still further to those of metal construction. As regards these large modern lake steamers I trust you will not attribute the admission to innate modesty when I say that neither my imagination nor experience prompt me to suggest, as an improvement any marked departure in the design of these steamers, considering the work they have to do and so long as financial results in connection with them are satisfactory. Should it be found, however, that many of these large steamers are too costly in construction and insurance under the severe test of modern competition; should they be found more spacious as iron ore carriers than requirements demand, and alteration might be required, and so, in a tentative manner, I committed to paper some time ago an outline of a steamer that might suit such a situation. I will be pleased to give you my views regarding this craft at some future time. I wish to make it clear, however, that your present, large, high class steamers are, as a type, far and away handsomer, more capacious and seaworthy for the work they have to do than any class of sea-going cargo steamers in the world. Moreover, these vessels cannot capsize and they do not founder in deep waters, except after severe collision.

Notwithstanding the difficulties attending the work of sending large vessels from the lakes to the coast by way of the St. Lawrence, several of our lake builders, as well as owners, are figuring on such a proceeding. By virtue of the stimulus likely to be given to the building of high class, foreign going steamers, when our mail subsidy law is put into force, we may look for at least a small, but lucrative foreign trade, and I see no reason why our lake shipbuilders and owners should not be the pioneers on some of the foreign routes, especially in the Pacific, for the direct trade between China, Japan, Australia and North America already amounts to $75,000,000 per annum. To absorb this trade there will be three new high powered British steamers in the Pacific this spring. Think of China requiring railroads to supply the wants of 300,000,000 of people! With steel plate at 2 cents a pound we could build steel steamers eligible for the $1 per mile bonus for something like $250,000, and such steel steamers would be as cheap as wooden ones per ton, dead weight ability. A sum equal to about one-tenth of the first cost should pay for cutting and rejoining; or ten per cent. of the first cost expended on some of our fastest existing steel lake steamers, might be sufficient to render them fit for the transatlantic trade, if they could be run profitably on domestic insurance. Less money than this would, however, equip such vessels for the Pacific or even South American trade, as westerly winds prevail on our eastern coast, resulting in comparatively smooth water, for a large portion of the year. In the north Atlantic trade it is different. I need hardly tell you that it is the continued hammering that strains the butts and places unusual strain on the crank shaft, and that is why no ordinary steamer can endure the North Atlantic trade for any great length of time. Of course, our dollar or so per mile is not a clear gain over the foreigners, for they subsidize and the men are less expensive, both as regards wages and keeping. For instance, their masters may average $100 a month in the better class of vessels we are now considering; their chief engineer receives $90 or $75, second $50, third $35, sailors and firemen $20. The masters find the ship in provisions for about 30 cents a man per day. Though we can build equal steamers as cheaply as they can we cannot work them so economically, nor insure them so cheaply. Still, if our government officials only interpret the new act liberally and do not harass our shipowners, there should be a good opening for lake steamers in the foreign trade. When we build steamers for the ocean trade it will, I believe, be found advisable to increase our depth in proportion to the breadth, and as this would be a step in the direction of the tramp type of steamer, I may give some statistics illustrative of the risks incident to steamers of narrow beam and low freeboard when loaded with light homogeneous cargoes. During the five years ending with 1885 some 187 British vessels foundered at sea. Many of these were "missing" vessels, but loss by stranding, known collision or fire are not included, and I fear that such losses last year were much greater, notwithstanding the load line act and increase of breadth. These vessels were mostly new but their great peculiarity was that their depth was equal to from 70 to 80 per cent. of the breadth, and the depth of one "missing" vessel was equal to 90 per cent. of the breadth. I need hardly tell you that these are extreme proportions, for our average steamer does not equal 60 per cent. of her breadth in depth. Many of these vessels were known beyond a doubt to be deficient in stability, both by calculation and experiment. The report from which I quote states that some of these fell over onto their beam ends; some took a list and the water soon found its way into the stoke hold and drowned out the fires; one was struck by a heavy sea and rolled over. I have excluded all the broad "missing" ships, and from the remaining large and deep vessels I estimate that nearly one-third of the foundered vessels were lost by reason of their unstable equilibrium. This should be a warning, but it must not be inferred that these vessels generally capsize suddenly, for such is not the fact. They heel over towards an inclined position of stable equilibrium, the cargo shifts further over to the lee side, the deck fittings strain or are washed away, water accumulates in the holds and they eventually capsize or founder. This excessive depth would not be by any means objectionable in awning or even spar deck vesssels, if loaded as such, like our large lake steamers, but when these vessels are loaded down in proportion to their great depth, with a homogeneous cargo of low specific gravity, it not only brings about a high center of gravity, but this is accompanied by a comparatively low freeboard, which prevents the center of buoyancy moving out from the center of the vessel sufficiently to give an adequate righting movement at large angles of inclination.

As I have already said these lake steamers are the finest cargo vessels afloat for the work they have to do, but you know our steamers have very full lines; indeed some are only about 15 per cent. better than a parallelopipedon, or say a square box in model, and in my opinion a very full vessel ought not to be loaded so deeply as a comparatively fine vessel of the same general dimensions. As these steamers may some day be appointed to the ocean trade, permit me to offer you a word or two of caution: To favorably compete with the three-deck tramp steamer there would be an ever present incentive to deeper loading. A tramp steamer of the same depth as our typical large steamer would be worked with about 3½ feet of freeboar to her upper deck. Need I say then that it would be hazardous in the extreme to attempt to put such a weight as would correspond to such a freeboard on these vessels? Would you not shrink from the opprobrium of having some thirty-seven or forty missing or foundered vessels entered on our list of casualties in each year? There are various reasons for this caution, I will just touch on one: When a vessel is posted as having capsized or foundered or is missing at sea, the first question among the underwriters is, not what were her dimensions, where or when was she built, or who was the master—the latter a most important query as I fancy many of the gentlemen present will readily admit—but what was her freight, where was she loaded, did she carry cotton and seeds from Bombay, maize from New Orleans or wheat or oats from San Francisco? Some one having suffered from spontaneous combustion, might wish to know if the vessel carried coals from the Tyne, which are frequently poured into the hold quite innocent of the trimming shovel. Again it might e asked whether she had water ballast tanks or not for in these vessels the water ballast tanks, as they construct them, called forth the disapproval of all cautious underwriters; so much so at one time that it was difficult to effect a reasonable insurance policy on them at Lloyds. On the other hand the double bottom as arranged in our steamers is only second in meritorious importance to the bottom itself, and, as I have already said or implied, the underwriter's mind instinctively turns to the most flagrant source of loss. If a vessel could be filled like a bushel measure, when loaded with such homogeneous cargoes as I have named, the dimensions or the proportionate principal dimensions of the hull, would then be the point of paramount importance, but there is always some empty space left and it is these little vacant corners that do

* Read before the Excelsior Marine Benevolent Association, order of lake captains.

the mischief, and that frequently before settling down has done its share in forming a loop hole for the transference of the center of gravity, outside of which the center of buoyancy cannot be induced to move, so as to avert disaster. It is on this account chiefly that we draw attention to the proportionate dimensions of our steamers, and the average salt water cargo vessel. The most momentous feature of this is that the ratio of breadth to depth is 30 per cent. greater in our steamers than the ordinary tramp and so, though I could recommend assimilation of breadth to depth, I would strenuously protest against too great a reduction in breadth, especially in vessels intended for a miscellaneous trade, where the cargo may be loaded hurriedly and sometimes it may be carelessly.

I must tell you, although it may be an unpopular remark, that we require more powerful boilers and engines for a safe trans-Atlantic trade, as a low powered steamer, though perfectly safe during a head wind or beam sea, is not fitted to run before the heavy North Atlantic seas. In the year 1872 there were twenty-five British steamers lost at sea. They either foundered or were abandoned. Several were known to have capsized, and fourteen of these were built in the year 1871, so they were new vessels but notoriously weak and under-powered. Their average speed at sea was about 8 knots per hour, and on that account there is little doubt but that many of them pooped while running. I had to do with one such vessel as I refer to, and on her arrival in port after one voyage I found the chief engineer in a very delicate state of health. The captain told me that they had run for about three days but, as the gale and sea was increasing, he decided on the third to heave to, if it could be done, for she could run no longer and float. Fortunately for him and others she was safely rounded to and all on board agreed that this consummation was only effected by a liberal use of oil; I mean by throwing oil—intended for the bearings—onto the troubled waters. It was the last important act of this excellent chief engineer—an old and valued friend of mine. He died some two or three days after bringing the vessel into port.

Intimately connected with increased speed is of course, augmented consumption of fuel. Though I believe in keeping down the coal bill as ardently as any one, I will here risk the assertion that the coal bill is by no means the chief item of expense, at least on short voyages, (and in any case a very low consumption may be purchased at too high a price.) Either the total expense of the crew, port charges, or insurance may exceed the cost of coal. However, I must limit this statement as applying to short voyages, of say two or three days duration. Take for instance a vessel burning 40 tons of coal per day. For a 3 days' voyage she will require about 150 tons in her bunkers. This will shut out 150 tons of freight and at $1 per ton the owner loses $150. But suppose he sends the steamer on a 20 days' voyage. He would then shut out perhaps 900 tons of freight and if his freight be worth $5.00 per ton the coal would cost him $4,500 of his freight. This may be an extreme example and I have left the cost of the coal out of the question, so as to illustrate what I mean as briefly as possible. Our str ng and excellent wooden lake steamers are not well fitted for the salt water trade, for they are iron fastened instead of being tree-nailed and coppered.

I may say with regard to the carrying power of tramp steamers that the Brunswick, 246 x 33 x 18 feet and 904 tons register, has carried over 2,200 tons total dead weight on a mean draft of water of 18 feet. She is built of iron and her equipped weight is 1,000 gross tons. She is not by any means a full vessel as we consider full, for her coefficient of displacement is .75. Several of our steamers have a coefficient of .84. The Brunswick is not considered to be a large carrier, as this type of vessel is expected to carry two and a quarter times its net register tonnage in dead weight. She cost $88,000 complete.

(To be continued.)

Masters and Engineers.

Appointments have been made for the twelve steamers and two schooners, controlled in the office of M. A. Hanna & Co, Cleveland, and managed by Capt. Geo. P. McKay. These boats will all engage in the ore trade. Their combined carrying capacity per trip is 29,900 gross tons, registered tonnage 20,714 and insurance valuation $1,993,000. C. B. Calder is chief engineer of the Menominee line and Thomas Shehan chief of the Mutual line. The captains are as follows: Menominee Transit Company: Steamers—Norman, Capt. J. B. Watts, formerly in the propeller Havana; Saxon, Capt. A. C. Chapman, last season in the Wilson line; German, Capt. A. G. Greenlee, last season in the Harper; Briton, Capt. M. W. Gotham, formerly in the employ of P. J. Ralph & Co., Detroit; Grecian, Capt. James Walsh, transferred from the Norman; Roman, not yet launched. Mutual Transportation Company: Steamers—Cambria, Capt. John Dunn; Corsica, Capt. William Cumming; Corona, Capt. John B. Hall. There are no changes in this line from last year. Orient Transportation Company: Steamers—Sparta, Capt. William C. Goodsell; Havana, Capt. James E. Miles, last season in the Sumatra; Vienna, Capt. Joseph W. Nicholson; Sumatra, Capt. William Russell, formerly in the barge B. L. Pennington; Helena, Capt. Thomas A Green.

Cleveland and Lakeside Transportation Company: Steamer—Ossifrage, Capt. A. Green, Engineer De May.

Work of the Ship Yards.

Capt. John Duff, of the schooner C. B. Benson, is building a schooner at Port Clinton, to have a capacity of 16,000 bushels. Capt Duff built the Benson. Another schooner about the same size is also under way at Port Clinton.

It is said at Superior that the American Steel Barge Company will undoubtedly build a dry dock at that port some time in the future. The location selected is immediately east of the shipyard of the barge company.

The steamer Pueblo was launched by the Milwaukee Shipyard Company last Saturday. She is 238 feet long, 36 feet in beam, and 20½ feet in depth, with capacity for about 1,900 tons freight. Her fore-and-aft compound engine was built by H. G. Trout, of Buffalo, and Davis Brothers of Milwaukee furnished the boilers. The Pueblo is owned by the syndicate which built the Denver, of which John B. Merrill is the head.

The Trouble at the Sault Under Control.

The leak in the cofferdam of the new lock pit at the Sault was not attended by resuls as serious as was expected when the break occurred a week ago. Gen. Poe was on the ground immediately and after a few days of hard work, the location of the leak—a quicksand pocket 8 feet deep, extending from the canal cribbing and passing under the clay—was ascertained and the wall and dam secured with piling that will permit of the pit being pumped out.

More Sales of Vessel Property at Detroit.

Special Correspondence to the MARINE REVIEW.

DETROIT, MICH., March 26.—Robert H. White and Capt. John Andrews of this city have bought the steambarge John E. Hall for $23,000. She was built by Samuel Hall at Manitowoc in 1889, classes A 1 and had a valuation last season of $30,000. The new owners have a contract for nearly the entire season to carry gypsum from Alabaster. Capt. Andrews will sail the Hall. Mr. White has sold the schooner David Stewart to John W. Squires of Marine City for $12,500. Chas. L. Ortmann has sold the steambarge Salina and barges Shiawassee and Keepsake to J. C. Miller and others, of Marine City, for $13,000.

The north-east winds of the past few days have filled the St. Clair river with ice and also started a good deal of ice down Detroit river from Lake St. Clair. Unless it jams on the flats, navigation to Lake Huron cannot be long delayed. The mild weather now prevailing is rapidly demoralizing the ice in this vicinity. The Mackinaw steamers are all ready to start as soon as the coast is clear.

Best Packing Made for Westinghouse Air Pumps.

CENTRAL RAILROAD CO., OF N. J.
Communipaw Station, March 2, 1891.

On Jan. 7 we packed a Westinghouse air pump on engine 166 with the Manhattan packing; the packing in the steam end of the pump lasted until Jan. 24, and in the air end until Feb. 5. This same pump was packed on Feb. 5, with Tuck's square packing, and had to be repacked on Feb. 14, and again on Feb. 18.

On Jan. 7 we packed a Westinghouse air pump on engine 130 with Manhattan packing; the packing lasted in the steam end of the pump until Jan. 21, and in the air end until February 3. This same pump was packed on Feb. 3, with Tuck's square packing, and had to be repacked on Feb. 8. and again on Feb 13.

On Jan. 9 we packed a Westinghouse air pump on engine 101 with Manhattan packing, which lasted until Jan. 22.

On Jan. 12 we packed a Westinghouse air pump on engine 120 with Manhattan packing: the packing lasted in the steam end of the pump until Jan. 28, and in the air end until Feb. 12.

On Jan. 12 we packed a Westinghouse air pump on engine 126 with Manhattan packing, the packing lasted until Jan. 28.

On Jan. 14, we packed a Westinghouse air pump on engine 127 with Manhattan packing, which is still in use.

On Jan. 20, we packed a Westinghouse air pump on engine "star" which is still in use.

C. W. WILLIAMS,
Master Mechanic.

The superintendent engineer of the Ocean Steamship Company, of Savannah, says: "We have been using the Manhattan packing on board the steamships of this line for the past ten years, with perfect satisfaction, and consider it the best fibrous packing in the market.

The steamer City of Monticello, of St. John, N. B., has replaced her English windlass with a Providence steam pump brake windlass from the American Ship Windlass Company, Providence, R. I.

Excelsior Marine Benevolent Association.

Four new members, James Lafromboise, John M. Johnson, James H. Warwick and Eber B. McQueen, were initiated by the Port Huron lodge, No. 2, last week.

The captains are being favored with many valuable presents from their friends in the lake business. Both the Cleveland and Buffalo branches have been presented with handsome silver water urns by the Dunham Towing and Wrecking Company, of Chicago. Finney & Channon, of Chicago, have presented the branch in that city with an elegant banner, especially designed by them.

Mabelle L. Mason, daughter of the light-keeper on Mamajuda island, Detroit river, to whom a medal was given for saving a man from drowning in the river last season, says in a letter to the Cleveland captains: "The lovely medal and chain have arrived, and I hardly know how to thank you all enough for so generously remembering me. You are all strangers to me, but whenever I look at the beautiful souvenir I shall feel a warm heart throb for the lake masters lodge of Cleveland, and may the Mamajuda light ever burn brightly for all, but especially for my unknown Cleveland frinds."

Col. Robert Ray, a prominent admiralty lawyer, addressed the Chicago E. M. B. A., at the lodge rooms, 200 South Water street, Wednesday afternoon. The speaker placed the captain aboard his vessel at the opening of navigation and sailed with him during an entire voyage, taking in all the accidents and incidents liable to occur on the trip. He dwelt upon the master mariner's duty on board ship and in port, delivering of cargo, discharge of crews, bill of lading and attention to fog signals. The speaker wound up his able address by advising the seaman to acquire a better knowledge of the speed and displacement of vessels and to always remember the dignity and character of their profession.

Frederick E. Saward, editor of the Coal Trade Journal, of New York, has just issued his eighteenth annual review of the coal trade of the country. The most important feature in this publication is the aim of the author to present only correct data.

Affairs in Admiralty.

CHECK DOWN IN PASSING.

According to Judge Brown, of the federal court, New York, a steamer which passes other boats at high speed, so near as to damage them by her displacement waves, is liable for such damage. The steamer Monmouth, a passenger boat plying in the harbor of New York, whose usual speed was 20 miles an hour, passed within about 1,000 feet of a fleet of thirty canal boats in tow of tugs. The displacement waves of the Monmouth caused the boats of the tow to strike against each other, whereby one was sunk and another damaged. The steamer on this occasion did not notice the tow and did not slacken her speed. The evidence indicated that the Monmouth was accustomed in passing near small boats or tows to slacken speed or sheer away. It also appeared that the present accident was probably due to inattention on the part of the officers of the steamer to the tow, or to an erroneous estimate of its distance. The tugs were unable to turn the tow so as to take the waves stern on in the short time that elapsed after the Monmouth was seen coming. No regulation required the tugs to signal, and so large a tow in broad day was a conspicuous object. The court held that the steamer was solely liable for the damage.

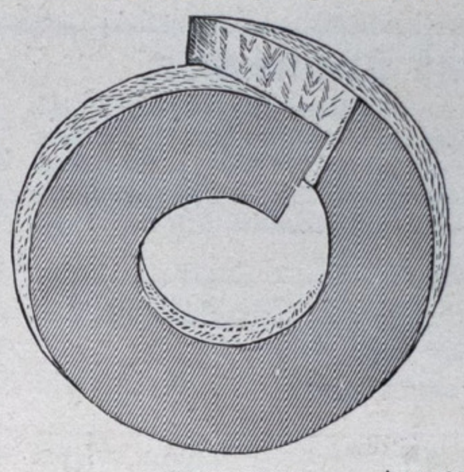
Judge Brown, of the District court, New York, decided a suit for personal injuries a few days ago. While the libelant was loading iron in the hold of a steamship, a skid, in ascending to the deck, caught under one of the coamings of a hatch, and the knot in one corner of the skid pulled out, causing the iron on the skid to fall upon the libelant. The evidence showed no defect in the skid, or the ropes or the lanyard; that the efficient cause of the accident was the negligence of the guy-tender or engineer, in allowing the skid to catch and in not stopping the engine. The court held that they were fellow servants with libelant, and that the only obligation of the ship was to see that the instruments used were reasonably sound and fit for the service, and libelant could not charge the ship for the accident resulting from the negligence of fellow servants.

In May, 1889, the schooner M. F. Merrick came into collision with the steamer R. P. Ranney, on Lake Huron, and the schooner was sunk in several hundred feet of water, a number of the crew going down with her. The Ranney was libeled for the collision, and Judge Brown held that the damages should be divided. Commissioner Davison last week reported that he found the value of the Merrick to be $7,250, the seamen's effects, $150, and interest $895,47, making a total of $9,870. Harvey D. Goulder, who succeeds Judge Swan as proctor for the owners of the Merrick, appealed from the commissioner's report, but Judge Sage, of the Cincinnati district, who is sitting in the Detroit court, sustains the commissioner.

Judge Hammond, who has been sitting in the federal court in Detroit for some time past has been compelled to return to his own court on account of urgent business. Judge George R. Sage, of the southern district of Ohio, (Cincinnati), has taken up the admiralty docket in the Detroit court in which Judge Swan has been interested as attorney.

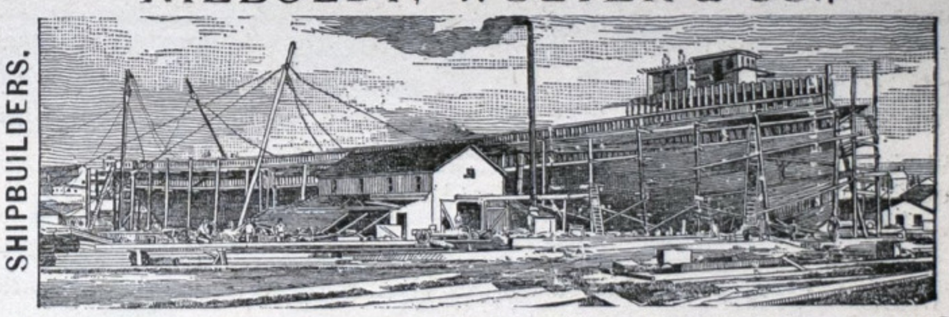
H. D. ROOT, Lorain, O.
Established 1853.
SHIPBUILDING AND GENERAL REPAIRING.
TUGS AND STEAM YACHTS A SPECIALTY.

GOULD'S STEAM AND WATER PACKING.



Pat'd June 1, 1880—The Original Ring Packing.
For Piston Rods, Valve Stem of Steam Engines, Steam Pumps, and especially adapted for Marine Engines and Electric Light Plants.
☞ In ordering, give **exact** diameter of Stuffing Box and Piston Rod or Valve Stem.
Self-Lubricating, Steam and Water Tight.
Less friction than any other known Packing. Never grows hard if directions are followed. Does not corrode the rod. **Every Package Fully Warranted.**
N.B.—This packing will be sent to any address, and, if not satisfactory after a trial of 30 days, can be returned at our expense. None genuine without this trade-mark and date of patent, stamped on wrapper. **All similar Packages are Imitations, and calculated to deceive.**
THE GOULD PACKING COMPANY,
TRADE-MARK. ALBION CHIPMAN, Treasurer, **East Cambridge, Mass.**

CON. STARKE. JOS. WOLTER. AUG. RIEBOLDT.
RIEBOLDT, WOLTER & CO.,
SHIPBUILDERS.



SHEBOYGAN, WIS.
FLOATING DRY DOCK WILL LIFT VESSELS OF 400 TONS.

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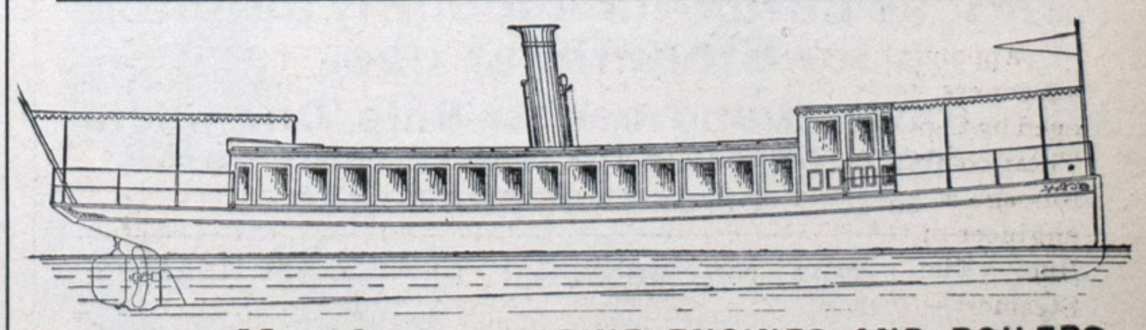
[Successor to R. Davis Marine Boiler Works.]
Manufacturers of Marine and Stationary Boilers, Smoke Stacks, Tanks, Etc.
MARINE REPAIRING SPECIALLY ATTENDED TO. | Open Day & Night. | OFFICE AND SHOPS, OREGON BET. BARCLAY & So. WATER STS.
T. L. McGREOR, Supt. **MILWAUKEE, WIS.** Telephone 742.



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PROPELLER WHEELS AND BOAT MACHINERY. **Tug Boats.**
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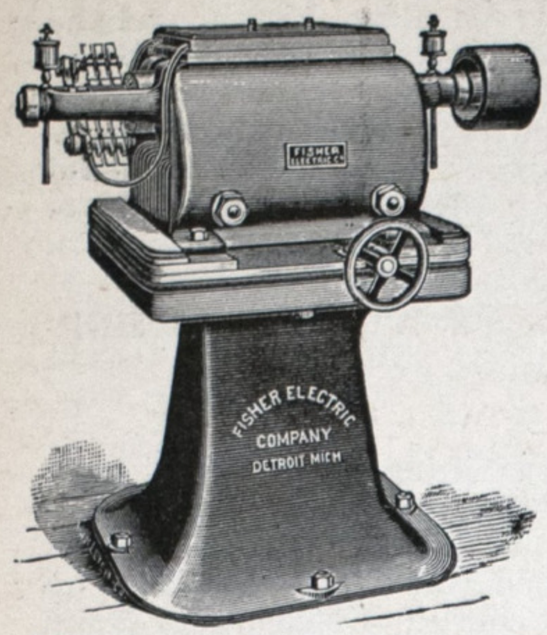
Send for free 1891 Catalogue, containing 58 Illustrations of Boats and Boat Machinery. **CHAS. P. WILLARD & CO.**
Cor. Clybourn and Southport Avenues, - CHICAGO, ILL.

SEE CAPT. PECK'S LETTER Regarding Incandescent Lighting Plant on the Steamer S. R. KIRBY.



NORTHWESTERN TRANSPORTATION CO.

DETROIT, MICH., Oct. 7, 1890.

FISHER ELECTRIC CO.,
Detroit, Mich.,

GENTLEMEN :—Replying to your inquiry regarding the operation of the 200 Light Incandescent Plant placed on the Steamer S. R. Kirby, we wish to say that the plant has operated during the season without an interruption and has not cost us one cent. No Lamps have been broken, and we would not be without it. Very truly yours,

E. M. PECK, President.

FISHER ELECTRIC COMPANY, 183, 185 & 187 Larned St., West, DETROIT, MICH.

E. L. PARRISH & CO.,

SHIP CHANDLERS, SAIL, AWNING and RIGGING LOFT. 11-13 Main Street, BUFFALO, N. Y.

Boston and Lockport Block Co.'s Patent 5-Roller Bushed Blocks. Telephone 314. **SEWELL & DAY'S BOSTON ROPE.**

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Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.

43 –FOR SALE—Newly finished 76 foot tug, engine 18x20, fine model.

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45—WANTED—Second engineer who has small capital to invest in passenger boat.

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47—FOR SALE—New Barge building, 127 ft keel, 30 ft. beam, 9½ hold, diagonally strapped, steeple compound engine, 14 in., 28 in. by 24 in., 125 pounds steam.

48—A few shares of stock in a first class passenger transportation company, for sale at $100 each.

50—FOR SALE—Tug, 52 ft. over all, 11 ft. beam, engine 10 x 12, boiler allowed 100 pounds, built in 1887.

52—WANTED—Tug Engine 20 x 20 or 18 x 22, with good boiler.

53—WANTED—Fishing tug, 60 feet long.

54—WANTED—Good mate for passenger boat, must have small capital to invest.

1867. PERFECT SATISFACTION GUARANTEED. 1891.

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Will furnish Brand free for Ship Chandlers or other dealers who desire their name and address on packages.

For Sale: Tugs, Marine Boiler, and Steam Heaters.

We have several good tugs ; also, a second hand marine boiler 14 feet long and 7 feet 6 inches diameter; allowed 80 lbs. steam; in good repair. Also, several second hand tug boat heaters for sale at reasonable prices. Apply to

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NEWLY FINISHED, FINE MODEL, FAST

TUG FOR SALE.

Dimensions, 76 feet long, 15½ feet beam, 7 feet deep, with an engine 18 x 20 ; steam supplied by steel boiler 6 ft. 8 by 10 ft. 8.

D. BELL ENGINE WORKS, *BUFFALO, N.Y.*

F. A. FORCIER. M. L. WEIL

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Just the Thing that is Wanted on Every Vessel!

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GENTS: It affords me great pleasure to testify of the great work your extinguisher does. I have four of them on board and for their simplicity of handling, as well as quickness of extinguishing a fire, they have no equal. Yours truly, CAPT. H. H. HICKMOTT, Schooner E. B. Palmer.

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	Arrive East.	Depart East.
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Fostoria Passenger	5 06 PM	5 11 PM

All trains daily except Sunday.

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	Arrive.	Depart.
Youngstown Accommodation	*7 15 AM	†6 05 AM
New York and Pittsburg Express	†5 15 AM	*8 10 AM
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Mantua Accommodation	*7 20 PM	*4 20 PM
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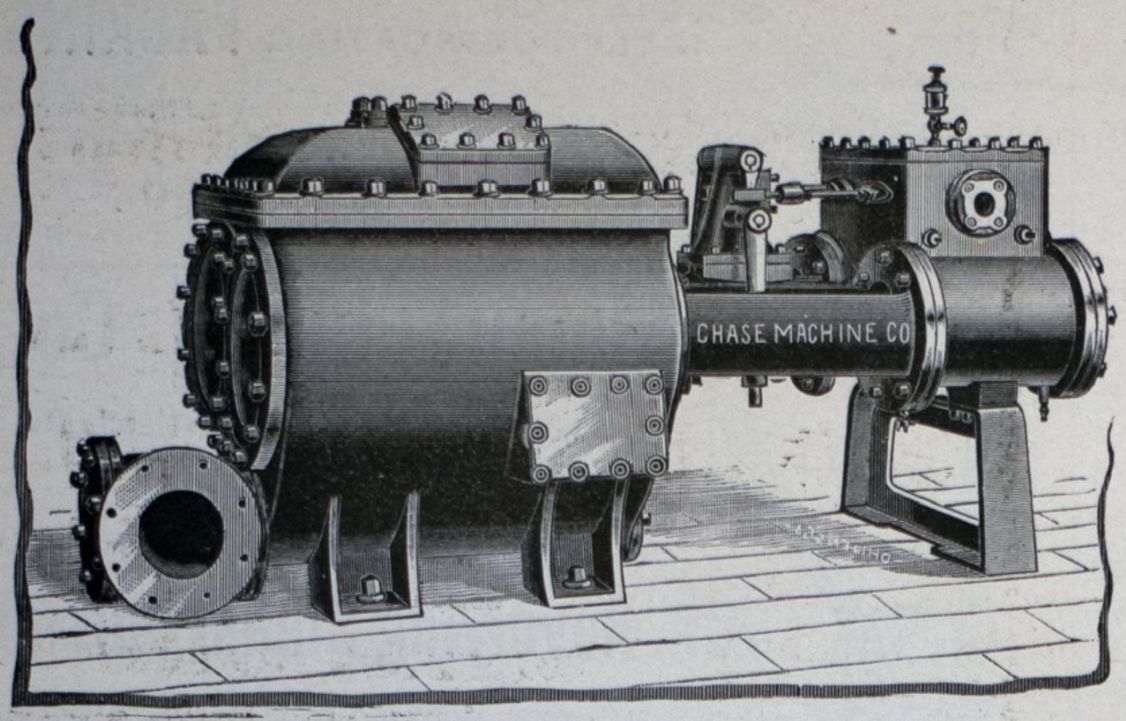

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Giving Dimensions and Location of all Important Docks, for Information of Owners and Masters.

DOCK.	LOCATION.	Length on Keel Blocks.	Width of Gate.	Depth of Water on Sill and Keel Blocks.	SPECIAL ADVANTAGES.	FOR NIGHT SERVICE.
Bay City Dry Dock & Ship Y'd Co.	Bay City, East Side River,.....	310	42½-43½	13–14	Nearest Dock to Mackinaw and Sault Ste. Marie.	Call Foreman Edward Trahan, cor. McEwan and Water Sts.
Cleveland Dry Dock Co.	Cleveland, So. Side River Bed,	312	40 ft. 8 in.	11½–12	Nearest Dock to Harbor Entrance.	Watchman at Dock. Manager, 75 Duane St. Foreman, 126 Fulton
Clark Dry Dock Co.....	Detroit, Lower Docks,.....	360 220	68 42	10½ 9 upper 11½ 10 end.	.....	Watchman at Dock will call Superintendent.
Detroit Dry Dock Co.	Detroit, Upper Docks,.....	239 300	42 56	8 12	.....	Watchman. Will call Sup't.
Ship Owners' Dry Dock Co.....	Cleveland, Head Old River Bed	340	50	18	Depth of water enables loaded vessels to dock here.	Call Watchman.
Union Dry Dock Co.....	Buffalo,..... Upper, Lower,	343 343	48 44	10½ 15½	Three steam derricks connected with each dock.	Call watchman.
Wolverine Dry Dock Co.....	Pt. Huron, near Water Works.	200	40	14	Dock Waterlogged Vesssls.	Watchman at Dock, nights and Sundays to call foreman.
R. Mills & Co.....	Buffalo, N. Y.	280 320	40 46	12 13½	Boom Derricks.	Call Watchman.

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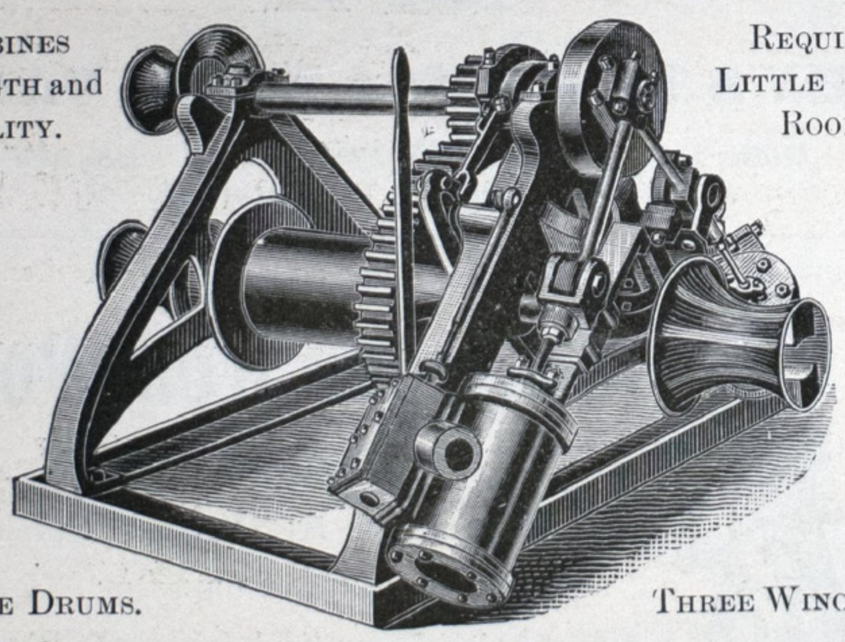

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"No Boat Properly Fitted Out Without Them."

Use only Machines that are RELIABLE; that have PROVED themselves IN ACTUAL SERVICE. 100 Boats already use them.

Cleveland, O., Jan. 6, 1891.

MILLER CHEMICAL ENGINE CO., Room 4, Bratenahl Blk.

GENTLEMEN: I had occasion on the 13th of November to use your Extinguisher on board the steamer Queen of the West, of Cleveland. A large lamp used for signal purposes aft, fell about twenty feet and set fire to the whole roof of the engine room. I do not know what the consequences would have been but for the prompt and effectual way in which your extinguisher put out the fire, as the wind was blowing hard and a heavy sea running at the time. I heartily recommend your machine as a fire extinguisher on all classes of steamships. Yours truly,

JOS. A. NICOLSEN, Master Str. Queen of the West.

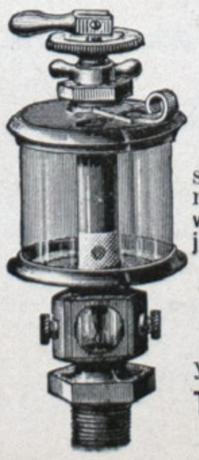
182 24th Street,

MILLER CHEMICAL ENGINE CO. Detroit, Mich., Jan 12, 1891.

DEAR SIRS: Going up Lake Huron last fall during a heavy gale of wind and a big sea running, a fire broke out in one of the rooms of the steamer Fayette Brown, through the accidental upsetting of a lamp among some papers, and had gained considerable headway before discovered. By the prompt use of one of your Chemical Engines it was quickly subdued, and I think there was less than a pint of the fluid used. Have no doubt the fire would have given us lots of trouble without some such prompt and easy way of extinguishing it. Since that time I do not think a steamboat properly fitted out without the Miller Chemical Engine.

Yours truly, C. H. BASSETT, Master Str. Fayett Brown.

Powell's Signal Oilers.



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Flow of oil can be instantly shut off by simply moving the lever down—**without disturbing the adjustment.**

Also made Double and Triple Sight feed for Marine Engines.

Your dealer can supply you. Manufactured by

The Wm. Powell Co.,

CINCINATTI, O.

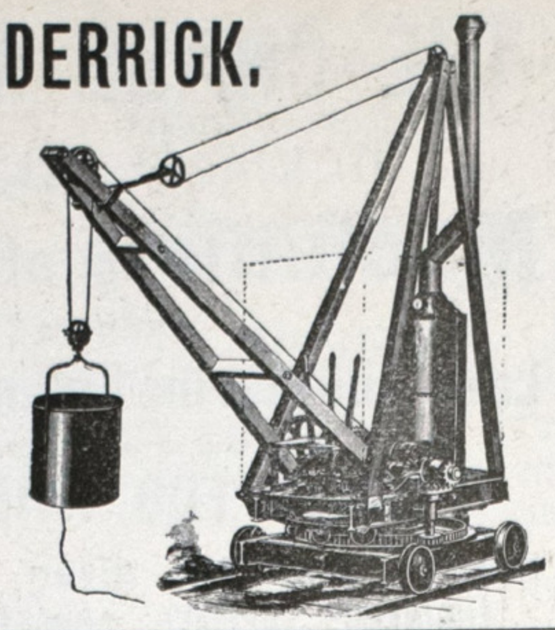
PROPOSAL FOR EXTENSION OF BREAKwater, at Buffalo Harbor. U. S. Engineer Office, Buffalo, N. Y., March 5th, 1891. Sealed proposals, in duplicate, for furnishing materials and building about 500 feet, more or less, of extension of the Breakwater at Buffalo Harbor, N.Y., will be received at this office until 2 p.m., on the 4th day of April, 1891, and opened immediately thereafter in the presence of bidders. The attention of bidders is invited to acts of Congress, of February 26th, 1885, and February 23d, 1887, vol. 23, page 332, and vol 24, page 414, Statutes at Large. Preference will be given to articles of domestic production or manufacture, conditions of quality and price (import duties included) being equal. Specifications, general instructions to bidders and blank forms of proposal, or necessary information, will be furnished on application to this office. The United States reserves the right to reject any or all proposals.

AMOS. STICKNEY, Major of Engineers, U.S.A.

Apr. 2.

THE SIMMERLY DERRICK.

This Derrick makes a complete circuit either to right or left, can be used on Lighter or Steamer, and is built with or without Self-Propelling Attachment, and of any capacity desired.



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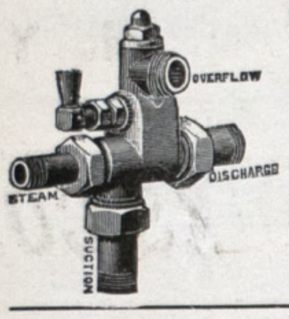

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Works from 25 to 140 lbs. Pressure and Higher if so ordered.

Hot pipes, jar or other motion will not effect it. A trial will convince you of its merits. On trial to responsible parties.

Extra Heavy Check Valves for marine purposes. Valves and Seats of hard metal can be renewed without disconnecting body. Write for prices. MANUFACTURED BY

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Modern Marine Engines AND Boilers

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Special Attention Given to Repairs.

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TRIPLE EXPANSION

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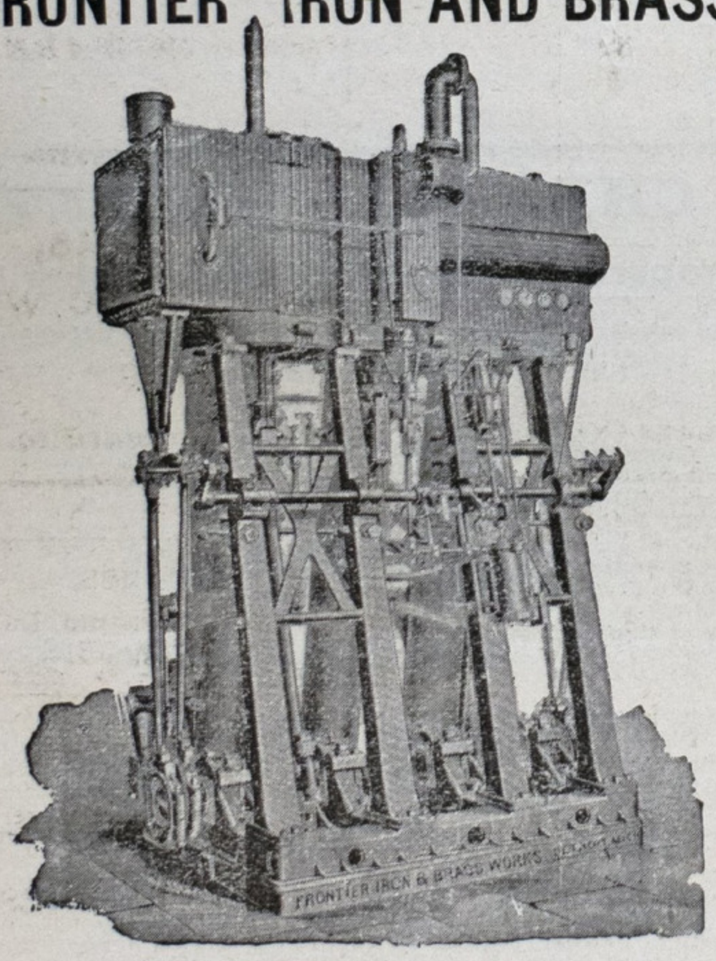

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Geo. F. Williams,
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and for the two counterparts of the Tampa, building at Wheeler's yard.

FARRAR & TREFTS,

Propeller, Yacht & Tug Wheels,

MARINE AND STATIONARY

ENGINES AND BOILERS.

REPAIRING PROMPTLY ATTENDED TO.

54 to 66 Perry Street, BUFFALO, N. Y.

Drilling Boilers and Engines a Specialty.

HAVE YOU HEARD OF THE

HYDRAULIC STEERING GEARS.

IT IS ASTONISHING HOW WELL AND EASY THEY DO THEIR WORK.

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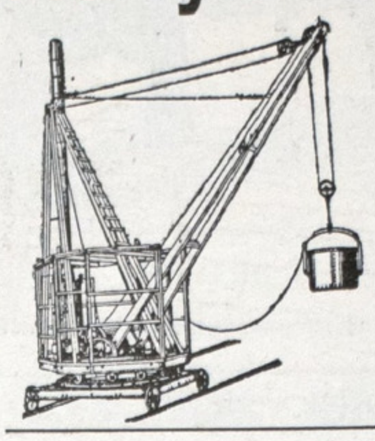

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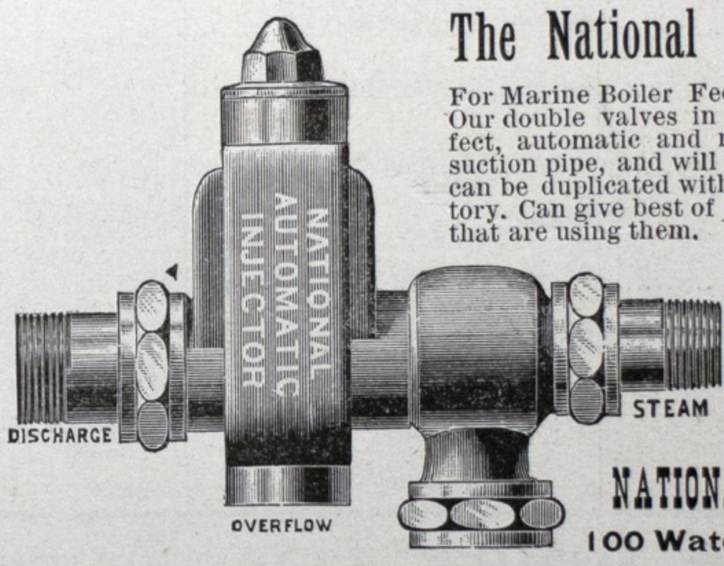

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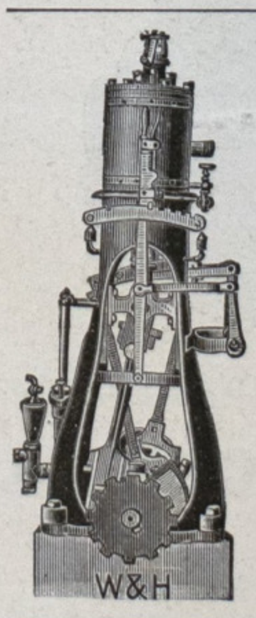

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